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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/588,788

06/06/2000

Heng-Ming Hsu

67,200-262

9280

7590

08/11/2006

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EXAMINER

TUGBANG, ANTHONY D

ART UNIT

PAPER NUMBER

3729

DATE MAILED: 08/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/588,788

Applicant(s)

HSU ET AL.

Examiner

A. Dexter Tugbang

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3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4-8 and 16-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-8,16-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 26, 2006 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 4, 5 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In Claim 4, the phrase of "progressing in any direction" (lines 7-8) is new matter. The specification and drawings, as originally filed, do not provide support for the planar spiral conductor layer progressing in any direction. For example, "any direction" can include directions that are not planar, e.g. a vertical direction that is perpendicular to the substrate, and

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the specification and drawings do not provide support for the spiral conductor layer to progress in a vertical direction to form a loop, or forming a loop in a vertical direction.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 4, 5 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 4, the phrase of “progressing in any direction” can include directions that are not planar, which would completely contradict forming of a planar spiral conductor layer. Therefore, the phrase is misleading and confusing, rendering the claim as being vague and indefinite.

#### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1, 4, 6, 8 and 16 through 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Haas 4,016,519.

Haas discloses a method for fabricating an inductor comprising: providing a substrate (e.g. 3 in Fig. 1); forming over the substrate a planar spiral conductor layer (e.g. 1) comprising a single spiral to form a planar spiral inductor, wherein a successive series of loops within the

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planar spiral conductor layer is formed with a progressive and discontinuous variation progressing from a center of the spiral defined by a first loop to a periphery of the series of loops.

The successive series of loops forms a uniform ellipse and the series of loops forms progressive stepwise changes in line widths to form a series of discrete line widths for the successive series of loops (see Fig. 1).

Regarding Claim(s) 6, 16 and 18, the first loop of Haas defines the center of the spiral with a comparatively narrow line width and the final loop defines a perimeter with a comparatively wide line width where the progressive and discontinuous variation comprises progressively increasing stepwise changes (see col. 2, lines 38-40).

Regarding Claim(s) 8, Haas shows that the successive series of loops comprises a single spiral of 7 loops.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haas.

Haas discloses the claimed manufacturing method as relied upon above in Claim 1. Haas does not appear to mention that the planar spiral conductor layer is formed of a conductor material that is a non-magnetic metal. However, the examiner takes Official Notice that forming a planar spiral conductor layer is conventional, old, and notoriously well known in the art of

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forming inductors. As evidence of obviousness, the examiner cites Wollnik (U.S. Patent 4,187,485, col. 3, lines 30+) to show that a conductor material of a non-magnetic material (e.g. copper) can be used as the material for a spiral conductor layer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Haas by utilizing a conventional non-magnetic metal of copper, as taught by Wollnik, for the advantages of inducing a magnetic field during operation of the inductor.

10. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haas in view of Murphy 5,844,451 and Esper et al 4,613,843.

Haas discloses the claimed manufacturing method as relied upon above in Claim 1. Haas does not appear to mention that the comparatively narrow line width is from 7 to 10 microns and that the comparatively wide line width is from about 17 to 21 microns.

Murphy teaches that line widths can be formed to widths up to 25 microns (col. 3, lines 62-64).

Esper teaches that line widths can be formed to widths of at least 4 microns.

Murphy and Esper show that comparative line widths of a planar spiral conductor can be formed between 4 to 25 microns as the values in between this range would be inclusive of the claimed ranges of 7 to 10 microns and 17 to 21 microns.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method Haas by forming the planar spiral conductor layer to a comparatively narrow line width from 7 to 10 microns and a comparatively wide line

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width from about 17 to 21 microns, as taught by Murphy and Esper, to perform the very same purpose of providing a planar spiral conductor layer to induce a magnetic field.

Alternatively, since Murphy and Esper teach upper and lower values for line widths of the planar spiral conductor layer, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have formed the spiral conductor layer of Haas with a comparatively narrow line width from 7 to 10 microns and a comparatively wide line width from about 17 to 21 microns, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

#### ***Response to Arguments***

11. The applicant(s) arguments with respect to claims 1, 4, 6 through 8 and 16 through 18 as filed in the response of May 24, 2006 have been considered, but are moot in view of the new ground(s) of rejection.

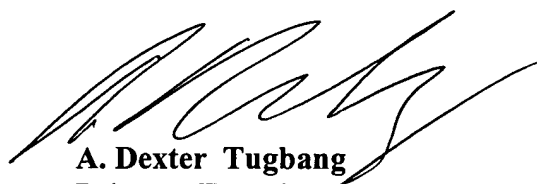
#### ***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Dexter Tugbang whose telephone number is 571-272-4570. The examiner can normally be reached on Monday - Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



**A. Dexter Tugbang**  
**Primary Examiner**  
**Art Unit 3729**

August 7, 2006